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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/624,536	07/24/2000	Vladimir Oudaltsov	15675.P325	5311

7590 10/22/2004

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EXAMINER
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LANIER, BENJAMIN E

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/624,536	<b>Applicant(s)</b> OUDALTSOV ET AL.	
	<b>Examiner</b> Benjamin E Lanier	<b>Art Unit</b> 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment of claims 1-3, 6-7, 9-10 has been fully considered and is entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites the limitation "the loop signal" in line 6. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 1 recites the limitation "the signal to be encrypted" in line 7. There is insufficient antecedent basis for this limitation in the claim.

6. Claims 1-10 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: There is no disclosure of the structural relationship between the non-linear circuit element, the mixer circuit element, and the chaos generator which renders the claim vague and indefinite.

7. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claim s fail(s) to

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correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed 27 July 2004. In that paper, applicant has stated the chaos generator produces a non-encrypted electric signal, and this statement indicates that the invention is different from what is defined in the claim(s) because claim 1 recites the limitation "a chaos generator producing an encrypted electrical signal".

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 1-4, 6, 8, 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim, U.S. Patent No. 6,049,614. Referring to claims 1, 6, 8, 9, Kim discloses a chaotic communication system wherein a transmitter comprises a chaotic signal that is used to mask a signal to be transmitted by modulating at least one variable of the master part by the external signal with chaotic characteristics and for feedbacking the at least one variable modulated of the master part by the external signal with chaotic characteristic to the master part (Col. 3, lines 12-40), which meets the limitation of a sender device, chaos generator producing an encrypted signal, a feedback loop. The transmitter contains a subtractor (Abstract), which meets the limitation of a mixer. The system is non-linear (Col. 1, lines 27-32), which meets the limitation of a non-linear circuit element. The signal is also filtered to have an adequate frequency band (Col. 6, lines 56-58), which meets the limitation of filter forming to limit the spectrum of the encrypted signal.

Referring to claim 2, Kim discloses that the external noise signal or chaotic signal is applied to each of the first synchronizing part and the second synchronizing part and the applied external noise signal or chaotic signal is scaled by a scaling factor (Col. 6, lines 56-64), which meets the limitation of filter forming disposed in the feedback loop presenting a transfer function which distributes the chaotic signal statistically over a given spectral profile.

Referring to claims 3, 4, Kim discloses that the signal is filtered to have an adequate frequency band (Col. 6, lines 56-68), which meets the limitation of filter forming disposed in the feedback loop comprising a bandpass filter.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, U.S. Patent No. 6,049,614, in view of DeFries, U.S. Patent No. 5,729,607. Referring to claim 10, Kim discloses a chaotic communication system wherein a transmitter comprises a chaotic signal that

is used to mask a signal to be transmitted by modulating at least one variable of the master part by the external signal with chaotic characteristics and for feedbacking the at least one variable modulated of the master part by the external signal with chaotic characteristic to the master part (Col. 3, lines 12-40), which meets the limitation of a sender device, chaos generator producing an encrypted signal, a feedback loop. The transmitter contains a subtractor (Abstract), which meets the limitation of a mixer. The system is non-linear (Col. 1, lines 27-32), which meets the limitation of a non-linear circuit element. The signal is also filtered to have an adequate frequency band (Col. 6, lines 56-58), which meets the limitation of filter forming to limit the spectrum of the encrypted signal. Kim discloses that the communication system can use analog or digital signals (Col. 13, lines 29-37) but Kim does not disclose an analog to digital converting means. DeFries discloses a non-linear communication system that utilizes a digital to analog converter (Col. 14, lines 43-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an analog to digital converter in the chaotic communication system of Kim in order to allow the system to support any compression/encoding format in a modular fashion as taught in DeFries (Col. 14, lines 41-43).

13. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, U.S. Patent No. 6,049,614, in view of Pecora, U.S. Patent No. 5,379,346. Referring to claims 5 and 7, Kim discloses a chaotic communication system wherein a transmitter comprises a chaotic signal that is used to mask a signal to be transmitted by modulating at least one variable of the master part by the external signal with chaotic characteristics and for feedbacking the at least one variable modulated of the master part by the external signal with chaotic characteristic to the master part (Col. 3, lines 12-40), which meets the limitation of a sender device, chaos generator

producing an encrypted signal, a feedback loop. The transmitter contains a subtractor (Abstract), which meets the limitation of a mixer. The system is non-linear (Col. 1, lines 27-32), which meets the limitation of a non-linear circuit element. The signal is also filtered to have an adequate frequency band (Col. 6, lines 56-58), which meets the limitation of filter forming to limit the spectrum of the encrypted signal. Kim does not disclose that the receiver and transmitter uses cascaded devices. Pecora discloses a chaotic encrypted communication system that utilizes cascaded transmitters and receivers (Col. 1, line 49 – Col. 2, line 16). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use cascaded transmitters and receivers in Kim in order to remove the need for transmitting different drive and synchronized signals by cascade connecting subsystems of the chaotic system as taught in Pecora (Col. 2, lines 28-32).


### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin E Lanier whose telephone number is 703-305-7684 until 10/21 and 703-272-3805 afterwards. The examiner can normally be reached on M-Th 7:30am-5:00pm, F 7:30am-4pm.

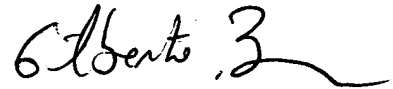
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (703)305-1830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Benjamin E. Lanier



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